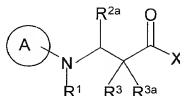


# WHAT IS CLAIMED IS:

1. A compound of Formula (I):



(I)

wherein:

$R^1$  is selected from the group consisting of hydrogen, alkyl, substituted alkyl, alkenyl, substituted alkenyl, cycloalkyl, substituted cycloalkyl, cycloalkenyl, substituted cycloalkenyl, aryl, substituted aryl, heteroaryl, substituted heteroaryl, heterocyclic and substituted heterocyclic;

$R^3$  and  $R^{3a}$  are independently selected from the group consisting of hydrogen, halogen, alkyl, substituted alkyl, alkenyl, alkynyl, alkoxy, haloalkoxy, alkylthio, or  $-(Alk^b)_mR^b$  in which  $Alk^b$  is a  $C_{1-3}$ alkylene chain,  $m$  is 0 or 1 and  $R^b$  is hydroxy, thiol, nitro, cyano, carboxy,  $-CO_2R^c$  (wherein  $R^c$  is alkyl),  $-SO_3H$ ,  $-SOR^c$ ,  $-SO_2R^c$ ,  $-SO_3R^c$ ,  $-OCO_2R^c$ ,  $-C(O)H$ ,  $-COR^c$ ,  $-OCOR^c$ ,  $-CSR^c$ ,  $-NR^dR^e$  (wherein  $R^d$  and  $R^e$  are independently hydrogen, alkyl, or substituted alkyl),  $-CONR^dR^e$ ,  $-OCONR^dR^e$ ,  $-NR^dCOR^e$ ,  $-CSNR^dR^e$ ,  $-NR^dCSR^e$ ,  $-SO_2NR^dR^e$ ,  $-NR^dSO_2R^e$ ,  $-NR^dCONR^eR^f$  (where  $R^f$  is hydrogen alkyl, or substituted alkyl) or  $-Nr^dSO_2NR^eR^f$ ;

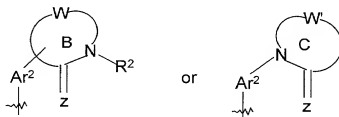
$X$  is selected from the group consisting of hydroxyl, alkoxy, substituted alkoxy, alkenoxy, substituted alkenoxy, cycloalkoxy, substituted cycloalkoxy, cycloalkenoxy, substituted cycloalkenoxy, aryloxy, substituted aryloxy, heteroaryloxy, substituted heteroaryloxy, heterocyclyloxy, substituted heterocyclyloxy and  $-NR''R''$  where each  $R''$  is independently selected from the group consisting of hydrogen, alkyl, substituted alkyl, alkenyl, substituted



aryl, substituted aryl, heteroaryl, substituted heteroaryl, heterocyclic and substituted heterocyclic;

$R^{2a}$  is either:

- (i) an  $-Ar^1-R^9$  group where  $Ar^1$  is aryl or heteroaryl optionally substituted with one or two substituents selected from the group consisting of hydroxy, acyl, acylamino, aminoacyl, acyloxy, alkyl, substituted alkyl, alkoxy, substituted alkoxy, amino, aminoacyl, aminocarbonyloxy, carboxyl, carboxylalkyl, carboxylamido, cyano, thiol, thioalkyl, substituted thioalkyl, halo, nitro provided that said acyl, acylamino, acyloxy, substituted alkyl, substituted alkoxy and substituted thioalkyl do not carry an aryl, substituted aryl, heteroaryl or substituted heteroaryl group; and  $R^9$  is selected from the group consisting of acyl, acylamino, acyloxy, aminoacyl, aminocarbonylamino, aminothiocabonylamino, aminocarbonyloxy, oxycarbonylamino, oxythiocarbonylamino, thioamidino, thiocarbonylamino, aminosulfonylamino, aminosulfonyloxy, aminosulfonyl, oxysulfonylamino and oxysulfonyl provided that when  $R^9$  is acylamino or acyloxy then the acylamino or acyloxy group does not carry an aryl, substituted aryl, heteroaryl or substituted heteroaryl group; or
- (ii) a group of formula (a) or (b):



wherein:

$Ar^2$  is an aryl or heteroaryl group optionally substituted, in addition to ring B or C, with one or two substituent(s) selected from the group consisting of hydrogen, halogen, hydroxy, alkoxy, substituted alkoxy, acyloxy, substituted acyloxy, amino, alkylamino, substituted alkylamino, dialkylamino,

substituted dialkylamino, acylamino, substituted acylamino, N-acyl-N-alkylamino, substituted N-acyl-N-alkylamino, (alkylsulfonyl)amino, substituted (alkylsulfonyl)amino, N-(alkylsulfonyl)-N-alkylamino, substituted N-(alkylsulfonyl)-N-alkylamino, alkyl, substituted alkyl, cycloalkyl, substituted cycloalkyl, alkenyl, substituted alkenyl, cycloalkenyl, substituted cycloalkenyl, alkynyl, substituted alkynyl, cyano, acyl, substituted acyl, carboxy, substituted carboxy, thiol, alkylthio, substituted alkylthio, alkylsulfoxy, substituted alkylsulfoxy, alkylsulfonyl, and substituted alkylsulfonyl;

10           Z is -O- or -S-;

B is a group wherein W, together with  $-C(=Z)NR^2-$ , forms a saturated or unsaturated heterocyclic group containing 2 to 5 carbon atoms and 0 to 4 additional heteroatoms selected from the group consisting of nitrogen, oxygen, and  $-SO_n-$  (where n is 0 to 2) wherein said saturated or unsaturated

15           heterocyclic group is optionally fused with one or two ring(s) structures selected from the group consisting of cycloalkyl, cycloalkenyl, heterocyclic, aryl and heteroaryl group to form a bi- or tri-fused ring system and further wherein said heterocyclic group and each of such ring structures are optionally substituted with 1 to 3 substituents selected from the group

20           consisting of with one or two substituent(s) selected from the group consisting of hydrogen, halogen, hydroxy, alkoxy, substituted alkoxy, acyloxy, substituted acyloxy, amino, alkylamino, substituted alkylamino, dialkylamino, substituted dialkylamino, acylamino, substituted acylamino, N-acyl-N-alkylamino, substituted N-acyl-N-alkylamino, alkylene dioxy,

25           (alkylsulfonyl)amino, substituted (alkylsulfonyl)amino, N-(alkylsulfonyl)-N-alkylamino, substituted N-(alkylsulfonyl)-N-alkylamino, alkyl, substituted alkyl, cycloalkyl, substituted cycloalkyl, alkenyl, substituted alkenyl, cycloalkenyl, substituted cycloalkenyl, alkynyl, substituted alkynyl, cyano, acyl, substituted acyl, carboxy, substituted carboxy, nitro, thiol, alkylthio, substituted alkylthio, alkylsulfoxy, substituted alkylsulfoxy, alkylsulfonyl,

30           substituted alkylthio, alkylsulfoxy, substituted alkylsulfoxy, alkylsulfonyl,

substituted alkylsulfonyl, aryl, substituted aryl, heteroaryl, and substituted heteroaryl;

$R^2$  is selected from the group consisting of alkyl, substituted alkyl, aryl, substituted aryl, heteroaryl, substituted heteroaryl, cycloalkyl, substituted cycloalkyl, cycloalkenyl, and substituted cycloalkenyl;

C is a group wherein W', together with  $-C(=Z)N-$ , forms a saturated or unsaturated heterocyclic group containing 2 to 5 carbon atoms and 0 to 4 additional heteroatoms selected from the group consisting of nitrogen, oxygen, and  $-SO_n-$  (where n is 0 to 2) wherein said saturated or unsaturated heterocyclic group is optionally fused with one or two ring(s) structures selected from the group consisting of cycloalkyl, cycloalkenyl, heterocyclic, aryl and heteroaryl group to form a bi- or tri-fused ring system and further wherein said heterocyclic group and each of such ring structures are optionally substituted with 1 to 3 substituents selected from the group consisting of with one or two substituent(s) selected from the group consisting of hydrogen, halogen, hydroxy, alkoxy, substituted alkoxy, alkylenedioxy, acyloxy, substituted acyloxy, amino, alkylamino, substituted alkylamino, dialkylamino, substituted dialkylamino, acylamino, substituted acylamino, N-acyl-N-alkylamino, substituted N-acyl-N-alkylamino, (alkylsulfonyl)amino, substituted (alkylsulfonyl)amino, N-(alkylsulfonyl)-N-alkylamino, substituted N-(alkylsulfonyl)-N-alkylamino, alkyl, substituted alkyl, cycloalkyl, substituted cycloalkyl, alkenyl, substituted alkenyl, cycloalkenyl, substituted cycloalkenyl, alkynyl, substituted alkynyl, cyano, nitro, acyl, substituted acyl, carboxy, substituted carboxy, thiol, alkylthio, substituted alkylthio, alkylsulfoxy, substituted alkylsulfoxy, alkylsulfonyl, substituted alkylsulfonyl, aryl, substituted aryl, heteroaryl, and substituted heteroaryl; or (iii) HetAr where HetAr is a nitrogen containing heteroaryl that is optionally substituted with an aryl or substituted aryl group;

and enantiomers, diastereomers and pharmaceutically acceptable salts thereof;

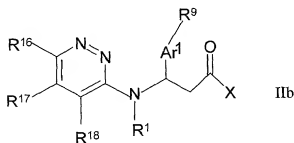
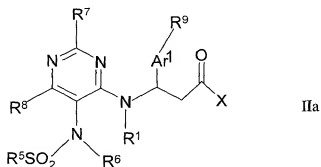
and further wherein the compound of Formula I has a binding affinity to VLA-4 as expressed by an  $IC_{50}$  of about  $15\mu M$  or less.

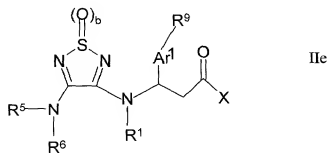
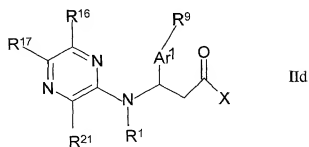
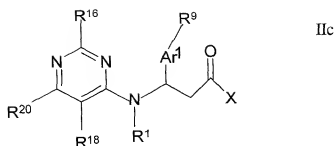
2. The compound of Claim 1 wherein  $R^{2a}$  is an  $-Ar^1-R^9$  group wherein  $Ar^1$  and  $R^9$  are as defined above.
3. The compound of Claim 1 wherein  $Ar^1$  is phenyl with the  $R^9$  in the *para* position of the phenyl ring.
4. The compound of Claim 3 wherein  $R^9$  is selected from the group consisting of  $-O-Z^a-NR^{11}R^{11'}$  and  $-O-Z^a-R^{12}$  wherein  $R^{11}$  and  $R^{11'}$  are independently selected from the group consisting of hydrogen, alkyl, substituted alkyl, cycloalkyl, substituted cycloalkyl, cycloalkenyl, substituted cycloalkenyl, heterocyclic, substituted heterocyclic, and where  $R^{11}$  and  $R^{11'}$  are joined to form a heterocycle or a substituted heterocycle,  $R^{12}$  is selected from the group consisting of heterocycle and substituted heterocycle, and  $Z^a$  is selected from the group consisting of  $-C(O)-$  and  $-SO_2-$ .
5. The compound of Claim 4 wherein  $R^9$  is  $-OC(O)NR^{11}R^{11'}$ .
6. The compound of Claim 1 wherein  $Ar^1$  is phenyl with a  $-OCON(CH_3)_2$  group at the *para* position of the phenyl ring.
7. The compound of Claim 1 wherein A in the above compounds is heteroaryl optionally substituted with 1 to 3 substituents selected from the group consisting of alkyl, substituted alkyl, alkoxy, substituted alkoxy, amino, substituted amino, cycloalkyl, substituted cycloalkyl, aryl, substituted aryl, heteroaryl, substituted heteroaryl, heterocyclic, substituted heterocyclic and halogen.

8. The compound of Claim 1 wherein A is selected from the group consisting of 1-oxo-1,2,5-thiadiazole, 1,1-dioxo-1,2,5-thiadiazole, pyridazine, pyrimidine or pyrazine wherein said rings are optionally substituted with 1 to 3 substituents selected from the group consisting of alkyl, substituted alkyl, alkoxy, substituted alkoxy, amino, substituted amino, cycloalkyl, substituted cycloalkyl, aryl, substituted aryl, heteroaryl, substituted heteroaryl, heterocyclic, substituted heterocyclic and halogen.

9. The compound of Claims 1-8 wherein  $R^1$ ,  $R^3$  and  $R^{3a}$  are hydrogen, and X is hydroxyl.

10. The compound of Claim 1 wherein the compound has formula IIa, IIb, IIc, IIc or IIe:





wherein X is hydroxy or alkoxy;

R<sup>1</sup> is hydrogen;

R<sup>3</sup> is selected from the group consisting of alkyl, substituted alkyl, alkenyl, substituted alkenyl, aryl, substituted aryl, cycloalkyl, substituted cycloalkyl, cycloalkenyl, substituted cycloalkenyl, heterocyclic, substituted heterocyclic, heteroaryl and substituted heteroaryl;

R<sup>6</sup> is selected from the group consisting of hydrogen, alkyl, substituted alkyl, cycloalkyl, substituted cycloalkyl, cycloalkenyl, substituted cycloalkenyl, heterocyclic, substituted heterocyclic, aryl, substituted aryl, heteroaryl, substituted heteroaryl, and -SO<sub>2</sub>R<sup>10</sup> where R<sup>10</sup> is selected from the



group consisting of alkyl, substituted alkyl, cycloalkyl, substituted cycloalkyl, cycloalkenyl, substituted cycloalkenyl, heterocyclic, substituted heterocyclic, aryl, substituted aryl, heteroaryl, substituted heteroaryl;

5  $R^7$  and  $R^8$  are independently selected from the group consisting of hydrogen, alkyl, substituted alkyl, cycloalkyl, substituted cycloalkyl, aryl, substituted aryl, heteroaryl, substituted heteroaryl, heterocyclic, substituted heterocyclic and halogen;

10  $R^{16}$  and  $R^{17}$  are independently selected from the group consisting of hydrogen, alkyl, substituted alkyl, alkoxy, substituted alkoxy, amino, substituted amino, cycloalkyl, substituted cycloalkyl, aryl, substituted aryl, heteroaryl, substituted heteroaryl, heterocyclic, substituted heterocyclic and halogen; and

15  $R^{18}$  is selected from the group consisting of alkyl, substituted alkyl, alkoxy, substituted alkoxy, amino, substituted amino, cycloalkyl, substituted cycloalkyl, aryl, substituted aryl, heteroaryl, substituted heteroaryl, heterocyclic and substituted heterocyclic;

20  $R^{20}$  is selected from the group consisting of hydrogen, alkyl, substituted alkyl, alkoxy, substituted alkoxy, cycloalkyl, substituted cycloalkyl, aryl, substituted aryl, heteroaryl, substituted heteroaryl, heterocyclic, substituted heterocyclic and halogen;

$R^{21}$  is selected from the group consisting of alkyl, substituted alkyl, alkoxy, substituted alkoxy, amino, substituted amino, cycloalkyl, substituted cycloalkyl, aryl, substituted aryl, heterocyclic and substituted heterocyclic;

$b$  is 1 or 2;

25  $Ar^1$  is aryl or heteroaryl optionally substituted with one or two substituents selected from the group consisting of hydroxy, acyl, acylamino, acyloxy, alkyl, substituted alkyl, alkoxy, substituted alkoxy, amino, aminoacyl, aminocarbonyloxy, carboxyl, carboxylalkyl, carboxylamido, cyano, thiol, thioalkyl, substituted thioalkyl, halo, nitro provided that said  
30 acyl, acylamino, acyloxy, substituted alkyl, substituted alkoxy and substituted

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thioalkyl do not carry an aryl, substituted aryl, heteroaryl or substituted heteroaryl group; and

R<sup>9</sup> is selected from the group consisting of acyl, acylamino, acyloxy, aminoacyl, aminocarbonylamino, aminothiocarbonylamino, aminocarbonyloxy, oxycarbonylamino, oxythiocarbonylamino, thioamidino, thiocarbonylamino, aminosulfonylamino, aminosulfonyloxy, aminosulfonyl, oxysulfonylamino and oxysulfonyl provided that when R<sup>9</sup> is acylamino or acyloxy then the acylamino or acyloxy group does not carry an aryl, substituted aryl, heteroaryl or substituted heteroaryl group;

and enantiomers, diastereomers and pharmaceutically acceptable salts thereof.

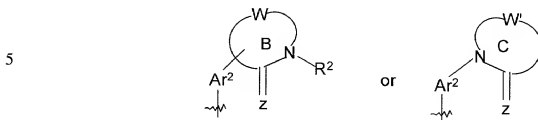
11. The compound of Claim 10 wherein Ar<sup>1</sup> is phenyl, pyridinyl, or pyrimidinyl ring.

12. The compound of Claim 11 wherein R<sup>9</sup> is selected from the group consisting of -O-Z<sup>a</sup>-NR<sup>11</sup>R<sup>11'</sup> and -O-Z<sup>a</sup>-R<sup>12</sup> wherein R<sup>11</sup> and R<sup>11'</sup> are independently selected from the group consisting of hydrogen, alkyl, substituted alkyl, cycloalkyl, substituted cycloalkyl, cycloalkenyl, substituted cycloalkenyl, heterocyclic, substituted heterocyclic, and where R<sup>11</sup> and R<sup>11'</sup> are joined to form a heterocycle or a substituted heterocycle, R<sup>12</sup> is selected from the group consisting of heterocycle and substituted heterocycle, and Z<sup>a</sup> is selected from the group consisting of -C(O)- and -SO<sub>2</sub>-.

13. The compound of Claim 12 wherein R<sup>9</sup> is -OC(O)NR<sup>11</sup>R<sup>11'</sup>.

14. The compound of Claim 13 wherein X is hydroxy and R<sup>1</sup>, R<sup>3</sup> and R<sup>3a</sup> are hydrogen and R<sup>9</sup> is -OCON(CH<sub>3</sub>)<sub>2</sub>.

15. The compound of Claim 1 wherein  $R^{2a}$  is a group of formula (a) or (b):



wherein  $Ar^2$ , B, C and Z are as defined above.

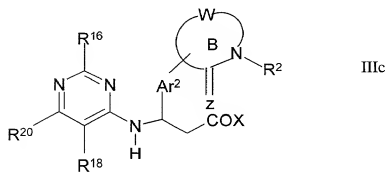
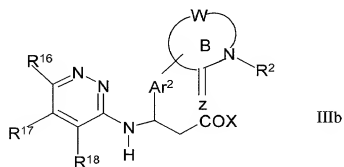
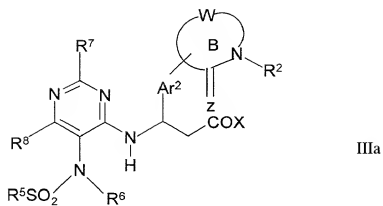
16. The compound of Claim 15 wherein B is either:

(a) a group wherein W, together with  $-C(=Z)NR^2-$  where Z is  $-O-$ , forms an unsaturated heterocyclic group containing 3 or 4 carbon atoms and 0 or 1 additional nitrogen atoms and further the wherein the unsaturated heterocyclic group is optionally substituted, in addition to the  $R^2$  group, with 1 or 2 substituents selected from the group consisting of alkyl, alkoxy, substituted alkoxy, alkenyloxy, substituted alkenyloxy, halo, hydroxy, mono or dialkylamino; or

(b) a group wherein W, together with  $-C(=Z)NR^2-$  where Z is  $-O-$ , forms a saturated or unsaturated heterocyclic group containing 3 or 4 carbon atoms and 0 or 1 additional nitrogen atoms wherein said saturated or unsaturated heterocyclic group is fused to a heterocyclic ring selected from the group consisting of dioxolane, dioxane, homodioxane, oxetane, tetrahydrofuran, dihydropyran, furan, oxazolidine, oxazole, isoxazole, oxazolidinone, oxathiolane, and 1,3-dioxolan-2-one and wherein the resulting fused ring is optionally substituted, in addition to the  $R^2$  group, on any ring atom capable of substitution with 1 or 2 substituents selected from the group consisting of alkyl, alkoxy, substituted alkoxy, alkenyloxy, substituted alkenyloxy, halo, hydroxy, mono or dialkylamino; and

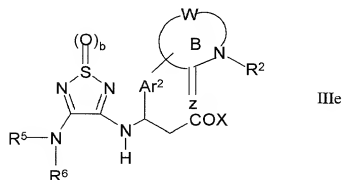
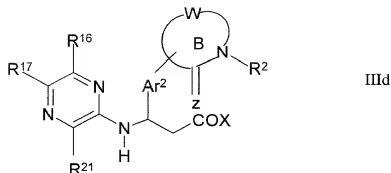
C is either:

- (a) a group wherein W, together with  $-C(=Z)NR^2-$  where Z is  $-O-$ , forms an unsaturated heterocyclic group containing 2 to 4 carbon atoms and 0 to 2 additional nitrogen atoms and further the wherein the unsaturated heterocyclic group is optionally substituted, in addition to the  $R^2$  group, with 1 or 2 substituents selected from the group consisting of alkyl, alkoxy, substituted alkoxy, alkenyloxy, substituted alkenyloxy, halo, hydroxy, mono or dialkylamino; or
- (b) a group wherein W, together with  $-C(=Z)NR^2-$  where Z is  $-O-$ , forms a saturated or unsaturated heterocyclic group containing 2 to 4 carbon atoms and 0 to 2 additional nitrogen atoms wherein said saturated or unsaturated heterocyclic group is fused to a heterocyclic ring selected from the group consisting of dioxolane, dioxane, homodioxane, oxetane, tetrahydrofuran, dihydropyran, furan, oxazolidine, oxazole, isoxazole, oxazolidinone, oxathiolane, and 1,3-dioxolan-2-one and wherein the resulting fused ring is optionally substituted, in addition to the  $R^2$  group, on any ring atom capable of substitution with 1 or 2 substituents selected from the group consisting of alkyl, alkoxy, substituted alkoxy, alkenyloxy, substituted alkenyloxy, halo, hydroxy, mono or dialkylamino.
17. The compound of Claim 16 wherein  $R^1$ ,  $R^3$  and  $R^{3a}$  are hydrogen, and X is preferably hydroxy.
18. The compound of Claim 1 wherein the compounds has the formula IIIa, IIIb, IIIc, IIId, or IIIe:



25

30



wherein:

X is hydroxyl or alkoxy;

Ar<sup>2</sup> is an aryl or heteroaryl group optionally substituted, in addition to  
 20 ring B or C, with one or two substituent(s) selected from the group consisting  
 of hydrogen, halogen, hydroxy, alkoxy, substituted alkoxy, acyloxy,  
 substituted acyloxy, amino, alkylamino, substituted alkylamino, dialkylamino,  
 substituted dialkylamino, acylamino, substituted acylamino, N-acyl-N-  
 alkylamino, substituted N-acyl-N-alkylamino, (alkylsulfonyl)amino,  
 25 substituted (alkylsulfonyl)amino, N-(alkylsulfonyl)-N-alkylamino, substituted  
 N-(alkylsulfonyl)-N-alkylamino, alkyl, substituted alkyl, cycloalkyl,  
 substituted cycloalkyl, alkenyl, substituted alkenyl, cycloalkenyl, substituted  
 cycloalkenyl, alkynyl, substituted alkynyl, cyano, acyl, substituted acyl,  
 carboxy, substituted carboxy, thiol, alkylthio, substituted alkylthio,

alkylsulfoxy, substituted alkylsulfoxy, alkylsulfonyl, and substituted alkylsulfonyl;

$R^5$  is selected from the group consisting of alkyl, substituted alkyl, alkenyl, substituted alkenyl, aryl, substituted aryl, cycloalkyl, substituted cycloalkyl, cycloalkenyl, substituted cycloalkenyl, heterocyclic, substituted heterocyclic, heteroaryl and substituted heteroaryl;

$R^6$  is selected from the group consisting of hydrogen, alkyl, substituted alkyl, cycloalkyl, substituted cycloalkyl, cycloalkenyl, substituted cycloalkenyl, heterocyclic, substituted heterocyclic, aryl, substituted aryl, heteroaryl, substituted heteroaryl, and  $-SO_2R^{10}$  where  $R^{10}$  is selected from the group consisting of alkyl, substituted alkyl, cycloalkyl, substituted cycloalkyl, cycloalkenyl, substituted cycloalkenyl, heterocyclic, substituted heterocyclic, aryl, substituted aryl, heteroaryl, substituted heteroaryl;

$R^7$  and  $R^8$  are independently selected from the group consisting of hydrogen, alkyl, substituted alkyl, cycloalkyl, substituted cycloalkyl, aryl, substituted aryl, heteroaryl, substituted heteroaryl, heterocyclic, substituted heterocyclic and halogen;

$R^{16}$  and  $R^{17}$  are independently selected from the group consisting of hydrogen, alkyl, substituted alkyl, alkoxy, substituted alkoxy, amino, substituted amino, cycloalkyl, substituted cycloalkyl, aryl, substituted aryl, heteroaryl, substituted heteroaryl, heterocyclic, substituted heterocyclic and halogen; and

$R^{18}$  is selected from the group consisting of alkyl, substituted alkyl, alkoxy, substituted alkoxy, amino, substituted amino, cycloalkyl, substituted cycloalkyl, aryl, substituted aryl, heteroaryl, substituted heteroaryl, heterocyclic and substituted heterocyclic;

$R^{20}$  is selected from the group consisting of hydrogen, alkyl, substituted alkyl, alkoxy, substituted alkoxy, cycloalkyl, substituted cycloalkyl, aryl, substituted aryl, heteroaryl, substituted heteroaryl, heterocyclic, substituted heterocyclic and halogen;

$R^{21}$  is selected from the group consisting of alkyl, substituted alkyl, alkoxy, substituted alkoxy, amino, substituted amino, cycloalkyl, substituted cycloalkyl, aryl, substituted aryl, heterocyclic and substituted heterocyclic;

$b$  is 1 or 2; and

- 5         $B$  is a group wherein  $W$ , together with  $-C(=Z)NR^2-$ , forms a saturated or unsaturated heterocyclic group containing 2 to 5 carbon atoms and 0 to 4 additional heteroatoms selected from the group consisting of nitrogen, oxygen, and  $-SO_n-$  (where  $n$  is 0 to 2) wherein said saturated or unsaturated heterocyclic group is optionally fused with one or two ring(s) structures
- 10        selected from the group consisting of cycloalkyl, cycloalkenyl, heterocyclic, aryl and heteroaryl group to form a bi- or tri-fused ring system and further wherein said heterocyclic group and each of such ring structures are optionally substituted with 1 to 3 substituents selected from the group consisting of with one or two substituent(s) selected from the group consisting
- 15        of hydrogen, halogen, hydroxy, alkoxy, substituted alkoxy, acyloxy, substituted acyloxy, amino, alkylamino, substituted alkylamino, dialkylamino, substituted dialkylamino, acylamino, substituted acylamino,  $N$ -acyl- $N$ -alkylamino, substituted  $N$ -acyl- $N$ -alkylamino, alkylenedioxy, (alkylsulfonyl)amino, substituted (alkylsulfonyl)amino,  $N$ -(alkylsulfonyl)- $N$ -
- 20        alkylamino, substituted  $N$ -(alkylsulfonyl)- $N$ -alkylamino, alkyl, substituted alkyl, cycloalkyl, substituted cycloalkyl, alkenyl, substituted alkenyl, cycloalkenyl, substituted cycloalkenyl, alkynyl, substituted alkynyl, cyano, acyl, substituted acyl, carboxy, substituted carboxy, nitro, thiol, alkylthio, substituted alkylthio, alkylsulfoxy, substituted alkylsulfoxy, alkylsulfonyl, substituted alkylsulfonyl, aryl, substituted aryl, heteroaryl, substituted
- 25        heteroaryl;

$R^2$  is selected from the group consisting of alkyl, substituted alkyl, aryl, substituted aryl, heteroaryl, substituted heteroaryl, cycloalkyl, substituted cycloalkyl, cycloalkenyl, and substituted cycloalkenyl; and



and enantiomers, diastereomers and pharmaceutically acceptable salts thereof.

19. The compound of Claim 18 wherein B is either:

- 5 (a) a group wherein W, together with  $-C(=Z)NR^2$  where Z is -O-, forms an unsaturated heterocyclic group containing 2 to 4 carbon atoms and 0 to 2 additional nitrogen atoms and further the wherein the unsaturated heterocyclic group is optionally substituted, in addition to the  $R^2$  group, with 1 or 2 substituents selected from the group consisting of alkyl, alkoxy, substituted alkoxy, alkenyloxy, substituted alkenyloxy, halo, hydroxy, mono or dialkylamino; or
- 10 (b) a group wherein W, together with  $-C(=Z)NR^2$  where Z is -O-, forms a saturated or unsaturated heterocyclic group containing 2 to 4 carbon atoms and 0 to 2 additional nitrogen atoms wherein said saturated or unsaturated heterocyclic group is fused to a heterocyclic ring selected from the group consisting of dioxolane, dioxane, homodioxane, oxetane, tetrahydrofuran, dihydropyran, furan, oxazolidine, oxazole, isoxazole, oxazolidinone, oxathiolane, and 1,3-dioxolan-2-one and wherein the resulting fused ring is optionally substituted, in addition to the  $R^2$  group, on any ring atom capable
- 15 of substitution with 1 or 2 substituents selected from the group consisting of alkyl, alkoxy, substituted alkoxy, alkenyloxy, substituted alkenyloxy, halo, hydroxy, mono or dialkylamino.
- 20

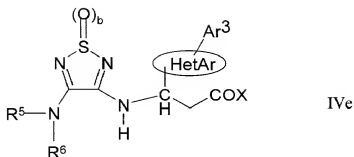
20. The compound of Claim 19 wherein  $Ar^2$  is preferably phenyl.

25 21. The compound of Claim 1 wherein  $R^{2a}$  is HetAr where HetAr is a nitrogen containing 6- membered heteroaryl that is optionally substituted with an aryl or substituted aryl group.

5



30



wherein:

HetAr is a nitrogen containing heteroaryl group;

Ar<sup>3</sup> is aryl or substituted aryl;

R<sup>5</sup> is selected from the group consisting of alkyl, substituted alkyl, alkenyl, substituted alkenyl, aryl, substituted aryl, cycloalkyl, substituted cycloalkyl, cycloalkenyl, substituted cycloalkenyl, heterocyclic, substituted heterocyclic, heteroaryl and substituted heteroaryl;

R<sup>6</sup> is selected from the group consisting of hydrogen, alkyl, substituted alkyl, cycloalkyl, substituted cycloalkyl, cycloalkenyl, substituted cycloalkenyl, heterocyclic, substituted heterocyclic, aryl, substituted aryl, heteroaryl, substituted heteroaryl, and -SO<sub>2</sub>R<sup>10</sup> where R<sup>10</sup> is selected from the group consisting of alkyl, substituted alkyl, cycloalkyl, substituted cycloalkyl, cycloalkenyl, substituted cycloalkenyl, heterocyclic, substituted heterocyclic, aryl, substituted aryl, heteroaryl, substituted heteroaryl;

R<sup>7</sup> and R<sup>8</sup> are independently selected from the group consisting of hydrogen, alkyl, substituted alkyl, cycloalkyl, substituted cycloalkyl, aryl, substituted aryl, heteroaryl, substituted heteroaryl, heterocyclic, substituted heterocyclic and halogen;

R<sup>16</sup> and R<sup>17</sup> are independently selected from the group consisting of hydrogen, alkyl, substituted alkyl, alkoxy, substituted alkoxy, amino, substituted amino, cycloalkyl, substituted cycloalkyl, aryl, substituted aryl, heteroaryl, substituted heteroaryl, heterocyclic, substituted heterocyclic and halogen; and

5  $R^{20}$  is selected from the group consisting of hydrogen, alkyl, substituted alkyl, alkoxy, substituted alkoxy, cycloalkyl, substituted cycloalkyl, aryl, substituted aryl, heteroaryl, substituted heteroaryl, heterocyclic, substituted heterocyclic and halogen;

$b$  is 1 or 2; and

and enantiomers, diastereomers and pharmaceutically acceptable salts

23. The compound of Claim 22 wherein HetAr is pyridinyl, pyrimidinyl, pyrazinyl, or pyridazinyl and Ar<sup>3</sup> is substituted phenyl.

25 25. A pharmaceutical composition comprising a pharmaceutically acceptable carrier and a therapeutically effective amount of a compound of Claim 1-23.

26. A method for binding VLA-4 in a biological sample which method comprises contacting the biological sample with a compound of Claim 1 under conditions wherein said compound binds to VLA-4.